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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,389	02/01/2002	James Orrin O'Dea	CDA0012002	2417

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Ronald J. Clark, P.C.  
POBox 8539  
Newport Beach, CA 92658

EXAMINER
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BRITT, CYNTHIA H

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/061,389

Applicant(s)

O'DEA, JAMES ORRIN

Examiner

Cynthia Britt

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election with traverse of Group I claims 1-9 in the reply filed on 10/4/04 is acknowledged. The traversal is on the ground(s) that a bit stream. "A proper search for art related to the elected Group would necessarily include the classes and subclasses relevant to a search for the non-elected Group. Additionally, Applicant wishes to point out that there are only twenty (20) presently pending claims. Thus, examination of all the claims would not present "a serious burden" on the Examiner. This is not found persuasive because the separate inventions of group I and group II, would not necessarily include a search in the other classification. As stated in the previous office action:

- I. Claims 1-9, drawn to detecting a predetermined invalid bit pattern in a digitally encoded bit stream, classified in class 714, subclass 811.
- II. Claims 10-20, drawn to error mapping for a memory array, classified in class 714, subclass 723.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group I has separate utility such as when a detected error or fault is registered or recorded to present a history for diagnostic purposes. See MPEP § 806.05(d).

Inventions Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group II has separate utility such as when a forbidden combination (a predetermined invalid bit pattern) of digital data, or improper condition is monitored to enable error or fault detection. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

The examiner would also like to point out that there are no linking claims between the groups, and there would therefore be no reason to search the Error Mapping or Logging (714/723 class/subclass containing 306 patents) when searching for "an apparatus for detecting an invalid bit pattern" (714/811 class/subclass containing 649 patents). Therefore, the additional search for non-elected Group II, since it is not related or necessary (separate classification and separate field of search required) for the search of the elected Group I, would present a serious burden to the examiner.

The full text of the cited passage from the MPEP is enclosed and made clear below:

803 Under the statute an application may properly be required to be restricted to one of two or more claimed inventions only if they are able to support separate patents and they are either independent (MPEP §806.04 - § 806.04(i)) or distinct (MPEP § 806.05 - § 806.05(i)). If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.

#### CRITERIA FOR RESTRICTION BETWEEN PATENTABLY DISTINCT INVENTIONS

There are two criteria for a proper requirement for restriction between patentably distinct inventions:

- (A) The inventions must be independent (see MPEP § 802.01, §806.04, §808.01) or distinct as claimed (see MPEP § 806.05 - §806.05(i)); and
- (B) There must be a serious burden on the examiner if restriction is required (see MPEP § 803.02, §806.04(a) - §806.04(i), §808.01(a), and §808.02).

The term "distinct" means that two or more subjects as disclosed are related, for example, as combination and part (subcombination) thereof, process and apparatus for its practice, process and product made, etc., but **are capable of separate manufacture, use, or sale as claimed, AND ARE PATENTABLE (novel and unobvious) OVER EACH OTHER** (though they may each be unpatentable because of the prior art). It will be noted that in this definition the term related is used as an alternative for dependent in referring to subjects other than independent subjects.

#### 806 Determination of Distinctness or Independence of Claimed Inventions

The general principles relating to distinctness or independence may be summarized as follows:

(A) Where inventions are independent (i.e., no disclosed relation therebetween), restriction to one thereof is ordinarily proper, MPEP §806.04 - §806.04(i), though a reasonable number of species may be claimed when there is an allowed (novel and unobvious) claim generic thereto. 37 CFR 1.141, MPEP §809.02 - §809.02(e).

(B) **Where inventions are related as disclosed but are distinct as claimed, restriction may be proper.**

(C) Where inventions are related as disclosed but are not distinct as claimed, restriction is never proper.

Where restriction is required by the Office double patenting cannot be held, and thus, it is imperative the requirement should never be made where related inventions as claimed are not distinct. For (B) and (C) see MPEP §806.05 - §806.05(i) and §809.03. See MPEP § 802.01 for criteria for patentably distinct inventions.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Karp et al. U.S. Patent No. 5,109,385.

As per claim 1, Karp et al. teach the claimed apparatus in which a source of digital signal run-length limited encoded with a symbol detector (element 40 figure 2) connected by a bus (element 38 figure 2) and with error detection functions (invalid bit pattern or invalid symbol). (Column 5 lines 50-65, Figure 2)

As per claim 2, Karp et al. teach (Figure 2) a symbol detector (element 40 figure 2) connected to an ECC (figure 2 element 44) and also connects to a decoder for providing decoding of RLL groups. (Column 6 lines 5-11, Figure 2)

As per claim 3, Karp et al. teach an apparatus which detects invalid RLL codes. (Figure 7, Column 12 lines 15-27)

As per claim 4, Karp et al. teach the claimed apparatus in which a source of digital signal run-length limited encoded with a symbol detector (element 40 figure 2) connected by a bus (element 38 figure 2) and with error detection functions (invalid bit pattern or invalid symbol). (Column 5 lines 50-65, Figure 2)

As per claim 5, Karp et al. teach symbol detector reads the symbols before the data is deinterleaved (figure 9, column 15 lines 1-35).

As per claims 6 and 7, Karp et al. teach that the symbol detector reads the data before the data goes to the ECC block (figure 2 elements 40, and 44).

As per claims 8 and 9, Karp et al. teach detecting valid and invalid bit patterns (Column 4 lines 8-22).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A Simple Detection Method for RLL Codes (Run Detector) [magneto-optical disk systems] by Nakagawa et al. IEEE Transactions on Magnetics Publication Date: Sept. 1997 On page(s): 3262 - 3264 Volume: 33 , Issue: 5 ISSN: 0018-9464

Inspec Accession Number: 5719742

This paper teach that in Magneto-Optical (MO) disk systems, the conventional edge detection method with a run-length limited (RLL) code has the limitation of detection of recorded bits at linear densities where the carrier level of the minimum mark length is small, because of increasing inter-symbol interference (ISI). We propose a new detection scheme which has performance as good as the conventional Viterbi detector and which yields good detection quality for such ISI. Stable detection is realized by detecting prohibited run-length codes and adjusting the decision algorithm to disk recording characteristics. The proposed detection scheme is effective at high linear

densities and with tilt phenomena, and this circuit is much smaller than that of the Viterbi detector

U.S. Patent No. 6,249,896

Ho et al.

This patent teaches Synchronization (sync) marks on a digital-versatile disk (DVD) optical disk are initially detected and later used to adjust bit timing after jitter has occurred. Each DVD physical sector contains many sync marks in a predefined sequence. Each sync mark has a sync-code field that varies for the sync marks in a sector, and a fixed sync pattern that is constant for all sync marks. The first sync mark is detected at initialization by detecting a previous sequence of sync codes of sync marks that precede the first sync mark. The sequence is programmable so that one to seven sync marks are in the sequence searched for. Detection for sync marks with bit errors can still occur since a programmable number of bit errors are allowed in each sync code and in the fixed sync pattern. One of the sync codes can be missed in the sequence and detection still made, allowing tolerance of errors in the sync marks when longer sequences of sync codes are matched. Once initial sync is made, the bit timing is adjusted when too many pseudo-sync clocks are inserted for sync marks missed due to jitter. An early and a late window around the expected sync point are used to enable re-sync to a detected fixed sync pattern.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 571-272-3815. The examiner can normally be reached on Monday - Thursday.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cynthia Britt  
Examiner  
Art Unit 2133

*Guy J. Lamarre*  
*Primary Examiner*